THE APPLICATION OF WORKPLACE SAFETY SCALE AMONG EMPLOYEES OF A UTILITY COMPANY

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By

ADLI BIN MOHD SHARIFF

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ABSTRAK

Kajian ini menggunakan Skala Keselamatan Pekerjaan bagi menilai tahap kepatuhan terhadap perilaku kerja selamat di kalangan kakitangan operasi sebuah syarikat bekalan air. Industri bekalan air adalah sebahagian daripada sektor utiliti yang menyediakan perkhidmatan dalam sesebuah negara dan ianya adalah antra perkhidmatan terpenting dan ini dapat diperhatikan semasa terdapat gangguan bekalan air yang akan menyaksikan keluhan orang ramai. Industri perkhidmatan adalah bergantung kepada kakitangan mereka disebabkan perubahan teknologi dan infrastruktur adalah berkait rapat dengan dana kewangan dan pelaburan. Bagi memastikan servis tidak terganggu, kakitangan perlu dilindungi daripada sebarang insiden kemalangan agar perkhidmatan optimum berterusan dapat dikekalkan. Didapati terdapat tiga (3) faktor daripada lima (5) faktor WSS adalah signifikan di dalam kajian ini dan ianya adalah berkaitan secara positive dengan kepatuhan terhadap perilaku kerja selamat, iaitu keselamatan pekerjaan, keselamatan pengurusan dan program keselamatan.

ABSTRACT

This study employs Hayes's Work Safety Scale (WSS) to determine the compliance with safety behaviour among the personnel of a water supply company. Water supply is part of the utility sector servicing the country and it is one of the most important services rendered, for in an event of water supply disruption, public uproar and outcry is imminent. The service industry is very dependable to the talents employed due to the technological advancement in the infrastructure is very much tied and limited to the availability of funding and willingness to invest. To ensure that the water supply service is uninterrupted, the workforce plying the trade should be ensured their safety is safeguarded against unwanted accident to ensure continuous service at an optimum level. It was found that the three (3) factors from the five facets of the WSS is significant to this sample settings and positively related to the compliance with safety behaviour (CSB), and they are the job safety, management safety and safety program.

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I would like to thank Allah S.W.T. the almighty for the path shown to me and the guidance that have brought me here and to what I am today.

Next, I would like extend my utmost gratitude to my supervisor, Dr. Chandrakantan Subramaniam for his insightful guidance and patience with the research process. My supervisor have inspired me in so many ways by being very helpful and generous in sharing his knowledge and made me aspired to become a better researcher.

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LIST OF ABBREVIATIONS

ILO	International Labour Organization
IV	Independent variable
N	Total number of samples
PPE	Personal protective equipment
PWHS	Perceptions of Workplace Hazards Scale
SCS	Safety Climate Survey
SD	Standard deviation
SOCSO	Social Security Organisation
SOP	Standard Operating Procedures
UN	United Nations
WHO	World Health Organization
WSS	Work Safety Scale

CHAPTER 1

INTRODUCTION

1.1 Background of Study

This is a replication study of the Work Safety Scale (WSS) developed by Hayes, Perander, Smecko, and Trask (1998), in a Malaysian context. Utility sector plays an important role especially to the developing country such as Malaysia. The utility sector companies not only provide service (electricity, water and sanitation) but would also benefits the population by enabling human and economic development. According to the statistics by United Nations, at least 1.2 billion people lack access to clean water. This study would be conducted on part of the utility sector in Malaysia, specifically the water distribution. As the biggest treated water distribution company in Malaysia (servicing 1.7 million accounts, approximately 7.5 million populations served), the operation of a water supply company servicing the State of Selangor, Federal Territories of Kuala Lumpur and Putrajaya is of utmost important in the heart of Malaysia, to facilitate and complement the nature of business and economic growth. The daily operation varies widely from in-house activities (sampling, meter reading, etc.) to the extent of employing contractors (pipe laying, pipe repair works, reservoir cleaning and others.) Continuous supply of clean water is expected 24 hours a day, seven days a week and 365 days a year without any disruption or compromise in terms of the water quality.

Water supply industry in the State of Selangor, Federal Territories of Kuala Lumpur and Putrajaya is a very fragmented industry, whereby the water industry there has been segregated between the water treatment operators and the water distribution part. This company is a private company with one (1) golden share held by the Federal Government, with 70% of its shares held by private holdings company, and the remaining 15% each belonged to two state owned companies. The scenario of treated water distribution handled by this company's operation is:

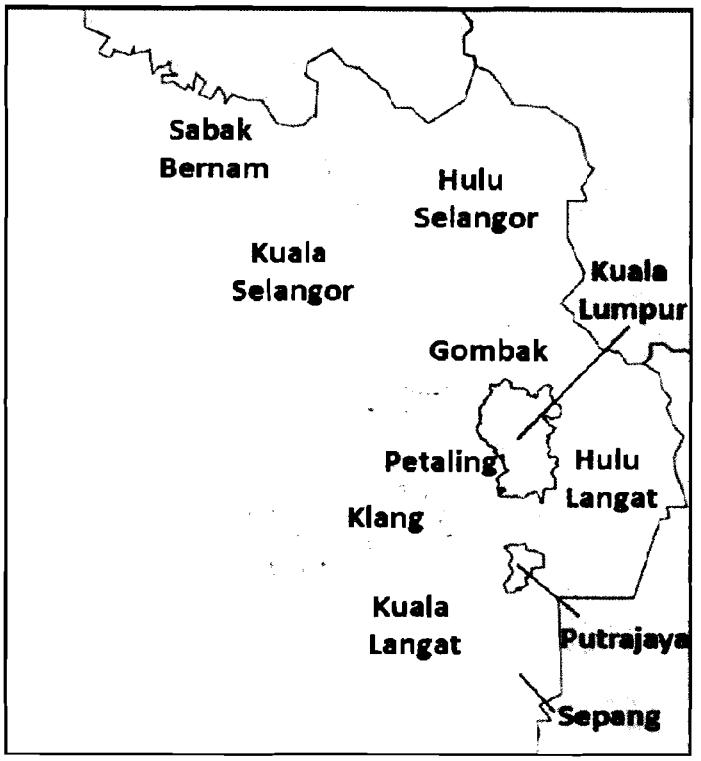
Table 1.1

Operation Information

Land Area	8,250 km^2
Population	7.5 million (approximation)
No. of Accounts	>1.73 million (domestic & industrial)
Pipe Length	25,427 km of pipes
Service Reservoirs	1,387 service reservoirs

Figure 1.1

Operational Dictricts / Zones



According to Social Security's (SOCSO) statistics from 1995 – 2003, the average number of work-related accidents in Malaysia was 91,249 cases in a year, means in average of 250 cases per day. And as per reported by the New Straits Times (2004), in the year of 2003, Malaysia SOCSO paid compensation amount at approximate RM305 million for the work-related accidents. The latest information from SOCSO Annual Report 2010, number of accidents at the work place increased by 3.57% to 35,603 in the year of 2010, compared to 34,376 cases in 2009. According to Kuźmicz (2010), employees working in electricity, gas and water supply seem to be most frequently exposed to risks involving strenuous conditions. Strenuous conditions are defined as situations where work is performed, for example, in a forced, awkward position and in conditions requiring hard physical effort, or in

particularly strenuous. Hence, the need to have this study conducted in a utility sector, specifically the water supply.

Table 1.2

Employees working in hazardous conditions per 1,000 employees, by sector and type of risk, 2007–2008 (adapted from Kuźmicz, 2010).

	Total		Women	Risks related to:		
				Work environment	Strenuous conditions	Mechanical factors
	2007	2008	2008	2008	2008	2008
Industry	168.3	167.8	27.5	107.7	38.9	21.2
Mining and quarrying	439.0	416.6	11.3	288.8	91.5	39.4
Manufacturing	149.3	147.0	29.1	99.2	28.2	19.6
Electricity, gas and water supply	148.9	173.1	24.2	45.0	105.4	22.7
Construction	136.9	129.6	2.7	67.5	46.1	15.9
Wholesale and retail trade, and repair of goods	25.1	29.1	8.4	12.2	9.8	7.1
Transport, storage and communication	93.7	91.6	15.8	25.8	61.0	7.0
Real estate, renting and business activities	45.0	50.2	19.0	17.9	25.7	1.5
Higher 7education	28.4	25.6	13.1	15.9	8.7	0.9
Health and social work	30.3	34.3	25.1	20.1	13.2	1.0
Other community, social and personal service activities (including sewage, waste disposal and similar activities)	130.9	132.6	11.7	57.2	51.5	23.9

1.2 Problem Statement

As according to Kuźmicz (2010), employees working in electricity, gas and water supply seem to be most frequently exposed to risks involving strenuous conditions. Strenuous conditions are defined as situations where work is performed, for example, in a forced, awkward position and in conditions requiring hard physical effort, or in conditions that are particularly strenuous. Malaysia is considered to be one of the upcoming developing nation, and we hope to make into the developed nations bracket by year 2020. As a developing nation, there is still a lot of catching up to do, especially in terms of development and the infrastructure made available to the public, hence the need for the nation to push forward for growth. The developed nations still reports cases of accidents, hence the need for Malaysia to have a proper management of our safety system to ensure our growth as a nation is not jeopardized not compromised. This is because we are trying to move ourselves from a developing nation in becoming a developed nation, in the rush of getting things done, we might overlook few risk and might faced unexpected circumstances.

According to Social Security's (SOCSO) statistics from 1995 – 2003, the average number of work-related accidents in Malaysia was 91,249 cases in a year, means in average of 250 cases per day. And as per reported by the New Straits Times (2004), in the year of 2003, Malaysia SOCSO paid compensation amount at approximate RM305 million for the work-related accidents. The latest information from SOCSO Annual Report 2010, number of accidents at the work place increased by 3.57% to 35,603 in the year of 2010, compared to 34,376 cases in 2009.

1.3 Research Questions

This study will try to determine the five (5) facets of the WSS and compliance with safety behaviour level among the operations personnel of a water supply company (Water Quality Department and Operations and Maintenance Department). Ideally, the identified questions of this proposed study are as per below:

1) What is the employee's safety behaviour compliance level?

2) What is the employee's perception towards the company's safety program?

3) Which aspect (of the five facets of WSS) is most significant to the safety behaviour compliance?

1.4 Research Objectives

This research objective is to analyze workplace safety percetions among the employees and the safety performance level. Among the objectives of this replication study are:

1) Determine employee's compliance with safety behaviour

2) Investigate relationship of WSS with safety behaviour.

3) To identify the most significant contributor of the five WSS subscale to the compliance with safety behaviour

1.5 Scope of Study

The scope of study is the biggest water supply company in Malaysia, part of the utility sector servicing the nation, operating in the Klang Valley, arguably the heart of the nation in terms of the economic and financial growth. This study would only concentrate on the operations personnel, namely those involved with strenuous activities discussed earlier as according to Kuźmicz (2010), and these operations personnel would be sampled across the ten (10) zones of the company's operations and the headquarters office.

1.6 Significance of Study

This study would contribute to the body of knowledge through expanding Hayes's WSS model to investigate the utility sector, specifically the water supply industry which has never been done before, in eastern cultural and developing country mindset settings. This would also provide the potential for the water supply company to improve the compliance with safety behaviour among its operational personnel, since they are the ones facing the risk associated with the water industry related activities. By addressing the compliance with safety behaviour, at least one part (the human factor, specifically the health and safety of the employee) of the many variables (business plan, business growth and development, management vision, financial stability and other factors) that contributes to the performance of a company is attended to. Since water supply is part of the utility sector, whereby livelihood and business operations desperately rely on their continuous service, a study on their safety performance is in order. This is to ensure the continuous optimum service from experienced hand and workforce other than the infrastructure service rendered, which

is limited to the age factor, technological boundary and business operations and investment.

1.7 Summary

This is a replication study of the Work Safety Scale (WSS) developed by Hayes et al. (1998). It is hoped that this study would be able to expand the model to investigate a water distribution company, which is part of the utility sector in a Malaysian context. Service related industries relies heavily on their infrastructure and technology and would always fall back to the human factor to ensure a smooth running since human is needed to run the technology and ensure the functionality of the infrastructure is not compromised. If all else fails, the manual labour of human is expected to keep the system running.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The function of a literature review is to identify and highlight important variables and documents significant findings from past researches that will serve as the foundation of the theoretical framework for the current study (Sekaran, 1992). This literature review discusses the importance of measuring safety perception in order to ensure the industrial accidents could be reduced, resulting in a better working environment for the staff and discusses on the five measurements of Work Safety Scale (WSS) and the compliance with safety behaviours. This would give few general ideas on the relationships between all five facets of Work Safety Scale (i. job safety, ii. coworker safety, iii. supervisor safety, iv. management safety practices, and v. satisfaction with the safety program) and compliance with safety behaviour, together with their importance.

2.2 Definition and Conceptualization of Variables

Since safety involves substantial direct and indirect costs, it is a major concern for organizations (Neal & Griffin, 2002). Consequently, a proactive basis in order to improve safety for individuals at work and prevent significant financial loss has seen an increase recognition within the industry (Parker, Axtell & Turner, 2001). According to Social Security's (SOCSO) statistics from 1995 – 2003, the average

number of work-related accidents in Malaysia was 91,249 cases in a year, means in average of 250 cases per day. And as per reported by the New Straits Times (2004), in the year of 2003, Malaysia SOCSO paid compensation amount at approximate RM305 million for the work-related accidents. The latest information from SOCSO Annual Report 2010, number of accidents at the work place increased by 3.57% to 35,603 in the year of 2010, compared to 34,376 cases in 2009.

This replication study is intended in observing the human perceptions towards safety in the workplace. As discovered through a research by Hayes et al. (1998), perceptions of workplace safety issues are related to accident-related variables such as accident rates, anxiety, and employee's compliance with safety behaviours. By adapting Hayes et al. (1998) 50-items Work Safety Scale (WSS), which assesses employees' perceptions of work safety, this study is going to examine and investigate the five distinct factors ranging from job safety, co-worker safety, supervisor safety, management safety practices, and satisfaction with the safety program, to investigate the insightfulness components related to the employees' perceptions.

2.2.1 Work Safety Scale

In understanding the safety climate or culture of a workplace, the perceptions and attitudes of the workforce are important factors in assessing safety needs. Safety solutions may fail if they do not take into account these prevailing attitudes and perceptions (Williamson et al., 1997). According to Yule (2003), an effective safety management in the twenty-first century should involve paying attention to human factors as system components with as much potential to cause, or save, dangerous system states as technical components. By paying attention to human factors, highly reliable organizations can identify and capture potential hazards before they manifest as accidents.

Workers' perceptions of safety on the job are associated with variables related to occupational incidents (Hayes et al., 1998). Employees who perceive their jobs as safe tend to be involved in fewer accidents than employees who perceive their jobs as relatively more dangerous (Guastello & Guastello, 1988; Harrell, 1990; Smith et al., 1992; Hayes et al., 1998). Employees who perceive their workplace as safe report lower levels of job-related anxiety and stress, and exposure to fewer environmental hazards (Hayes et al., 1998), variables that have been strongly linked to accident rates (Guastello, 1991).

A 50-item instrument that assesses employees' perceptions of work safety, the Work Safety Scale (WSS), was constructed by Hayes et al. (1998) and validated using three independent samples. The main purpose of this study was to develop an instrument that would have adequate psychometric integrity (reliability and validity), and comprehensively assess important dimensions of perceptions of workplace behaviours. The results of those studies showed that the WSS measures five factorial distinct constructs; (a) job safety, (b) co-worker safety, (c) supervisor safety, (d) management safety practices, and (e) satisfaction with the safety program. Each of those scales has a high degree of internal consistency across the three samples.

Supervisor safety and management safety practices were the best predictors of job satisfaction. In addition, supporting to previous researches of other measures on perceptions of workplace safety, such as the Occupational Hazard Survey (OHS) (Guastello & Guastello, 1988), the Safety Climate Survey (SCS) (Zohar, 1980), the Physical Demands and Dangers (PDD) (Sandman, 1992), and the Perceptions of Workplace Hazards Scale (PWHS) (Smith et al., 1992), supervisor safety and management safety practices were significantly correlated with reported accident rates. Co-worker safety and supervisor safety were strongly linked to employee's compliance with safety behaviours. WSS subscales were logically related to job stress, psychological complaints, physical complaints, and sleep complaints (Hayes et al., 1998).

2.3 The Relationship between Variables

The present study will examine safety performance using work safety scale (WSS) by Hayes et al. (1998) consisting of five facets of domain that were job safety, co-worker safety, supervisor safety, management safety, and satisfaction with the safety programs and policies. The following review will briefly explore each predictor of WSS on safety performance.

2.3.1 Job Safety and Compliance with Safety Behaviour

A study on job safety was done to describe a particular type of organizational climate and to examine the implications (Zohar, 1980). This study involves a set of questionnaire based on few dimensions: (a) perceived management towards safety, (b) perceived effects of safe conduct on promotion, (c) perceived effects of safe conduct on social status, (d) perceived organizational status of safety officer, (e) perceived importance and effectiveness of safety training, (f) perceived risk level at work place, and (g) perceived effectiveness of enforcement versus guidance in promoting safety. From the dimensions, a 40-items questionnaire had been developed using five point Likert scale. The scale consists of 1 (Highly disagree) to 5 (Highly agree). The questionnaire was then administered to workers of four productions categories that were randomly choose from five factories. Those four categories were metal fabrication, food processing, chemical industry and textile industry. Two hypotheses indicated that chemical plants have the safest climate scores followed by metal processing, textile factories and food processing plants was the lowest amongst all. Perceived relevance of safety to job behaviour was the most influence dimensions in

determining safety climate levels. The second most influence dimension was perceived management attitude towards safety. These two highly influence dimensions can supported the second hypotheses. As a conclusion to fit in this subtopic of the job safety, workers have their own opinions regarding safety aspects of their workplace.

Hayes et al. (1998) had developed and validated 50-items of WSS on workers' perceptions on work safety. They stressed out that employees' perceptions of work safety are related with variables associated to industrial accident rates. Minor accident involvements found in workplaces where the workers viewed as secure compared to more dangerous workplace as viewed by the workers. The study shows that job safety was positive-linked to employee's compliance to safety behaviour.

Few years later after the development of WSS, a study on casual attribution of Ghanaian industrial workers for accidents occurrences had been conducted on 320 respondents (Gyekye & Salminen, 2007) together with the participation of their supervisors. There were two types of methodologies of the study; interview and questionnaire distribution. Interview was administered individually to protect the anonymity of respondents with the duration of 15 to 20 minutes according to their context in which they were conducted and education background. The questionnaire were consisted of 30-items of 5 point Likert scale ranging from 1 (Very little) to 5 (Very much) on respondents' attributions for the accident causality by the dispositional qualities of accident victims (internal factors) or the situational and

environmental factors (external). The result of the alphas was 0.89 for external factors and 0.79 for internal factors. These types of statistical analyses involved were ANOVA, t-test and comparison of an item-by-item. The single way ANOVA was used to confirm the differences of statistical significance of external and internal factors scale. The t-test value generated to test for statistically significance differences between victims and supervisors' causal attributions on the internal and external causal factors scale. The final part of measures implicated item-by-item comparison between victims and supervisors' causal attributions on external and internal causal scale. The ANOVA result showed that common workers attributed accident causality more towards external factors and less to the vice versa. In the comparative analyses, it was discovered that attributions of workers and their supervisors seemed to be in the middle. More over, the victim's (worker) responsibilities for accident occurrences were lower as compared to their supervisors. The comparison on item-by-item disposed results in two factors causal scale. The study finding reveals that job accident occurrences were caused by human error and environmental factors with the present of human factors as main antecedent to the accident process.

2.3.2 Co-worker Safety and Compliance with Safety Behaviour

Safety in the workplace can be managed from a number of perspectives, including ergonomic research, which offers good advice about the design of 'safe' systems, by adopting management systems to improve safety, and considering individuals' disposition towards safety and risk taking at recruitment (Burt et al., 2008). Since the 1980s numerous studies have examined safety climate (e.g, Brown and Holmes, 1986; Dedobbeleer and Be´land, 1991; Hofmann and Stetzer, 1996; Mearns et al., 1998,

2003; Cheyne et al., 1998; Zohar, 1980, Zohar, 2000). There is now a growing body of evidence which suggests that safety climate influences safety practices (Zohar, 1980), unsafe behaviour (Hofmann and Stetzer, 1996), accidents (Mearns et al., 1998, 2003; Zohar, 2000), and is a useful predictive indicator of safety performance (Flin et al., 2000). It seems appropriate to conclude that safe work behaviour is facilitated by a positive safety climate.

Geller and colleagues (Roberts and Geller, 1995; Geller et al., 1996; Geller, 2001) were perhaps the first to formally recognize the importance, and potential use, of promoting safety through co-worker relations. This research teams coined the term 'actively caring' which refers to employees' caring enough about the safety of others to act accordingly (Geller et al., 1996). That is, actively caring requires employees to "go beyond the call of duty to identify environmental hazards and unsafe work practices and then implement appropriate corrective actions when unsafe conditions or behaviours are observed" (Roberts and Geller, 1995). Actively caring also relates to a phenomenon that Hofmann and Stetzer (1996) called approach intentions, defined as the tendency for team members to approach one another regarding safety related activities. Geller notes that actively caring might overcome (or perhaps supplement) the need for management to constantly monitor safety related behaviour, by employees taking this role/responsibility to help ensure their co-workers' safety.

Burt et al. (1998) developed the considerate and responsible employee (CARE) scale which is a reliable measure of employees' attitudes toward their co-worker's safety –

a measure of caring. The care scale measures workers' attitudes (strongly disagree to strongly agree) to 21 statements relating to behaviours, which if performed would increase co-workers' safety. The scale items (which all load on a single factor) relate to identifying, removing and discussing hazards, to reporting and discussing accidents, to understanding and communicating safety information, to helping and warning co-workers, and to recognizing co-workers' limits. While other attitudinal safety measures include items regarding 'co-workers attitudes to safety' (Donald and Canter, 1994), these tap into an employee's perception of their co-worker's safety attitudes rather than how workers feel about actually engaging in specific behaviours aimed at enhancing their co-workers' safety. Although other attitudinal measures include a question or two regarding co-workers' safety, these items tend to focus on the single component of safety communication scale and includes the item ''Individuals should encourage colleagues to work safety".

Another safety research study by Burt et al. (2008) has identified the potential importance of having considerate and responsible employees who care about the safety of their co-workers. This study had the general aim of identifying variables that are related to employees having a caring attitude towards their co-worker's safety. Variables examined as possibly related to caring were co-worker knowledge, opener ability, team tenure, co-worker and supervisor support, group orientation and group cohesion. The relationship between caring and the personal support dimension of contextual performance was also examined. This research involved with two sample studies (Study 1 and Study 2) which attempted to identify variables which are related to the development of caring attitudes. Study 1 sampled workers in the forestry and

construction industries, and found that caring was positively correlated to group cohesion and to the amount of knowledge an employee had about their co-workers. Study 2 sampled workers in a road construction and a power generation company, and found that caring was positively correlated with team tenure and the personal support dimension of contextual performance. Implications of these findings were discussed in terms of the recruitment of team members, and the management of the caring aspect of team safety climate.

2.3.3 Supervisor Safety and Compliance with Safety Behaviour

Unsafe work practices continue to prevail in many organizations resulting in work related injuries, occupational diseases, and fatalities (International Labour Organization, 2007). Researchers have recently identified safety leadership as a key contributing factor to the prevalence of accidents and injuries in the workplace. Barling et al. (2002), found that transformational leadership (Bass, 1985) is positively associated with employee perceptions of workplace safety climate when the leadership behaviour focused specifically on safety. Similarly, Kelloway et al. (2006), examined the effects of a passive form of safety leadership and found that employee perceptions of safety climate were adversely affected when leaders did not actively promote safe work behaviour and practices. Furthermore, perceptions of safety climate mediated the relationship between leadership and safety-related events, which in turn predicted occupational injuries (Barling et al., 2002; Kelloway et al., 2006).

Mullen and Kelloway (2009) conducted a study to assess the impact of safety-specific and general transformational leadership training interventions on both leader and

employee safety outcomes. Transformational leadership based interventions were assessed using a pre-test, post-test, and control group design. A total of 54 nurses' leaders (50 females and 4 males) with average age of 49.73 (*SD* = 8.72), average number of years employed was 10.47 (*SD* = 7.78), and average working of 38.36 hours per week (*SD* = 5.56), from 21 long-term health care organizations were randomly assigned to general transformational leadership training and safety-specific transformational leadership training, The effects of training on leaders' self-reported attitudes towards safety, self-efficacy, and intentions to promote safety were assessed. Multivariate Analysis of Variance showed that leadership training resulted in significant effects on manager post-training ratings of safety attitudes, intent to promote safety, and self-efficacy. The effects of leadership training on employee (N = 115) perceptions of leader safety-specific transformational leadership, safety climate, safety participation, safety compliance, safety-related events and, injuries were also assessed. Multivariate Analysis of Covariance, with the pre-test scores as the covariates, showed that leadership training resulted in significant effects on the safety-specific transformational leadership and safety climate outcomes.

2.3.4 Management Safety Practices and Compliance with Safety Behaviour

The past three decades have seen the rise to prominet of researches in the area of occupational safety (Vinodkumar and Bhasi, 2010). Its primary objective is to predict safety related outcomes such as accidents and injuries in order to provide valuable guidance for improving safety in organizations. This requires extensive knowledge, not only about the various aspects that influence safety but also as to how this influence occurs.

Improved working condition is part of safety management, but it has also positively influence employees' attitudes and behaviours with regard to safety, thereby reducing accidents in workplace (Vinodkumar and Bhasi, 2010). The root cause of a great majority of industrial disasters in the past can be traced back to the absence of an adequate safety management system. After examining the events before and after the Bhopal disaster, Bowander (1987) observed that three types of errors, human error, technological error and system error occurred simultaneously to trigger off the incident. The researcher pointed out that safety team from the parent company headquarters had reported two years before the incident that safety management practices in the plant was poor. This raises many questions about the way in which safety management is handled in developing countries like India. Most of the authors (e.g. Bowander, 1987; Chouhan, 2005; Gupta, 2002) who studied the Bhopal gas leak accident unanimously agreed that programmes and policies for managing safety in workplace in major accident hazard process industries in developing countries are clearly inadequate and require modification.

Accident Analysis and Prevention study conducted by Vinodkumar and Bhasi (2010), attempts to examine the various safety management practices and their influence on safety performance. The study measured employees' perceptions on six safety management practices and self-reported safety knowledge, safety motivation, safety compliance and safety participation by conducting a survey using questionnaire among 1566 employees belonging to eight major accident hazard process industrial units in Kerala, a state in southern part of India. The reliability and uni-dimesionality

of all the scales were found acceptable. Path analysis using AMOS-4 software showed that some of the safety management practices have direct and indirect relations with the safety performance components, namely, safety compliance and safety participation. Safety knowledge and safety motivation were found to be the key mediators in explaining these relationships. Safety training was identified as the most important safety management practice that predicts safety knowledge, safety motivation, safety compliance and safety participation. These findings provide valuable guidance for researchers and practitioners for identifying the mechanisms by which they can improve safety of workplace.

2.3.5 Satisfaction with Safety Program and Compliance with Safety Behaviour

The safety culture of an organization is ultimately reflected in the way safety is managed in the workplace. It is important to note that an organization's safety management system cannot consist of a set of policies and procedures on a bookshelf. The safety management system is the manner in which safety is handled in the workplace and how those policies and procedures are implemented into the workplace (Kennedy and Kirwin, 1998). Kennedy and Kirwan, (1998) also asserted that the nature by which safety is managed in the workplace (i.e. resources, policies, practices and procedures, monitoring, etc.) will be influenced by the safety culture/climate of the organization. Safety management should be integrated into the organizational system and management practice. Certainly in high-risk industries, safety should be considered number one priority.

2.4 Summary

The studies reviewed in this chapter supports the validity and realiability of WSS in measuring the respondents' perception of work safety and the suitablity of the model for this type of study. This chapter has showed the relationship between independent variables (job safety, coworker safety, supervisor safety, management safety practices and satisfaction with the safety program) and dependent variables (compliance with safety behaviour) through the research framework. Since the five (5) facets of WSS are measuring very distinct parameters of human perception and the internal consistency is quite rigid, it is believed that this model provides for vast potential to be utilized in this study.

CHAPTER 3

METHODOLOGY

3.1 Introduction

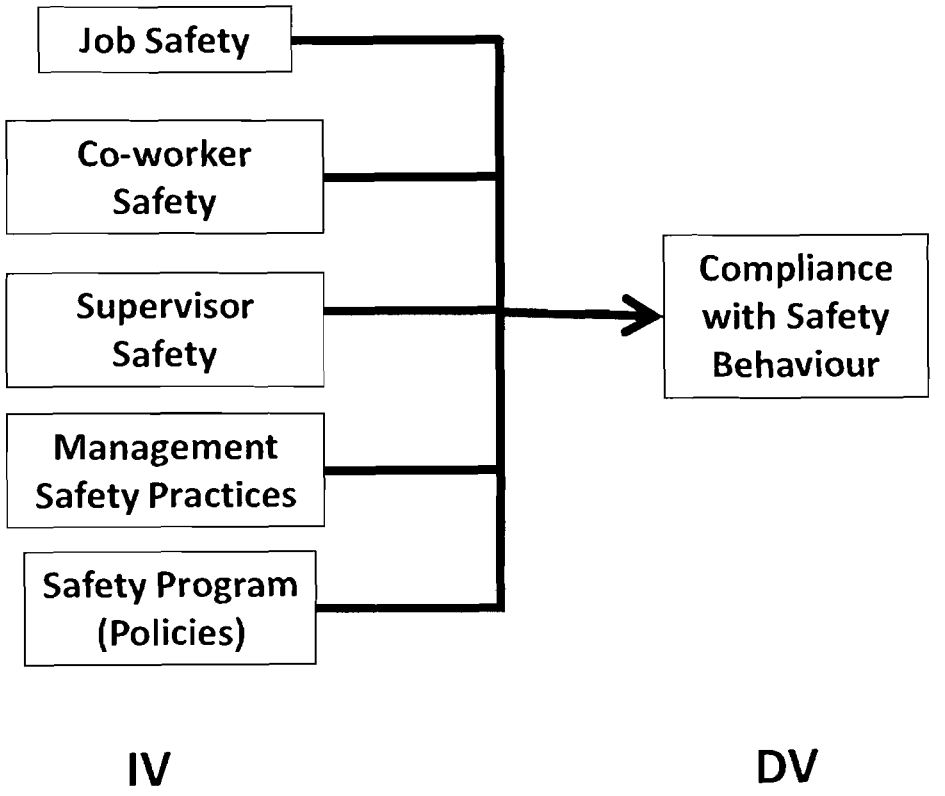
The previous chapter has discussed related literatures and empirical studies on workplace safety and measurable safety performance. This chapter presents the research methodology and procedures conducted thorughout this study. These include the design of study, population and sample, data collection, measurements, questionnaire design, pilot study and data analysis.

3.2 Research Framework

The research framework (Figure 3.1) shows the interconnection between all five facets of employees' work safety perceptions (the independent variables) and the compliance with the safety behaviour (the dependent variable).

Figure 3.1

Research Framework



3.3 Design of the Study

The population sampled by this study is in a water supply company, specifically to their operations personnel (in this study, the Water Quality Department and Operation and Maintenance Department). This a cross sectional study via a questionnaire which was distributed to the operations personnel across ten (10) operational zones (Fig 3.1); namely Kuala Lumpur, Petaling, Gombak, Klang, Hulu Langat, Hulu Selangor, Kuala Langat, Sepang, Kuala Selangor and Sabak Bernam and its headquarters office in Kuala Lumpur. These operational zones are strictly for their business operations and not tied to the municipality or the local government boundaries.

their business operations and not tied to the municipality or the local government boundaries.

Figure 3.2

Water Supply Company Operational Dictricts / Zones

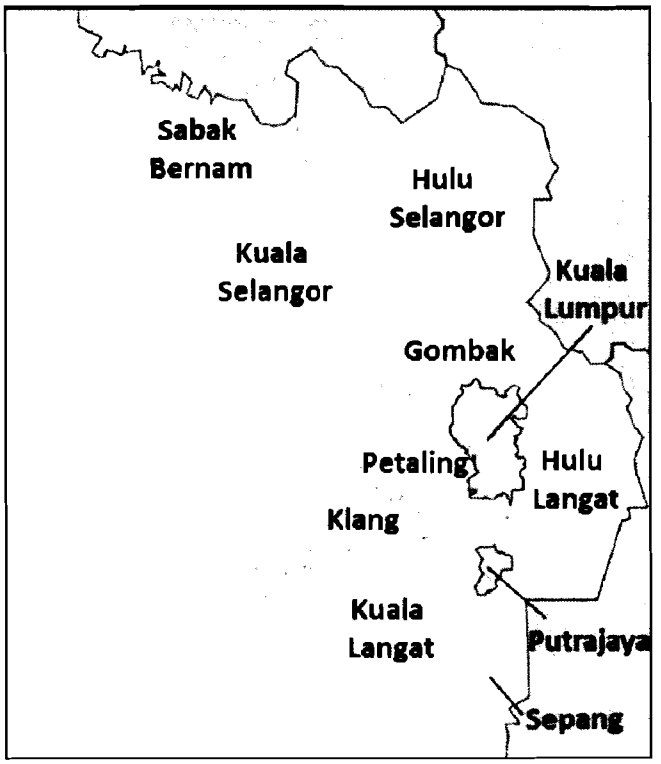
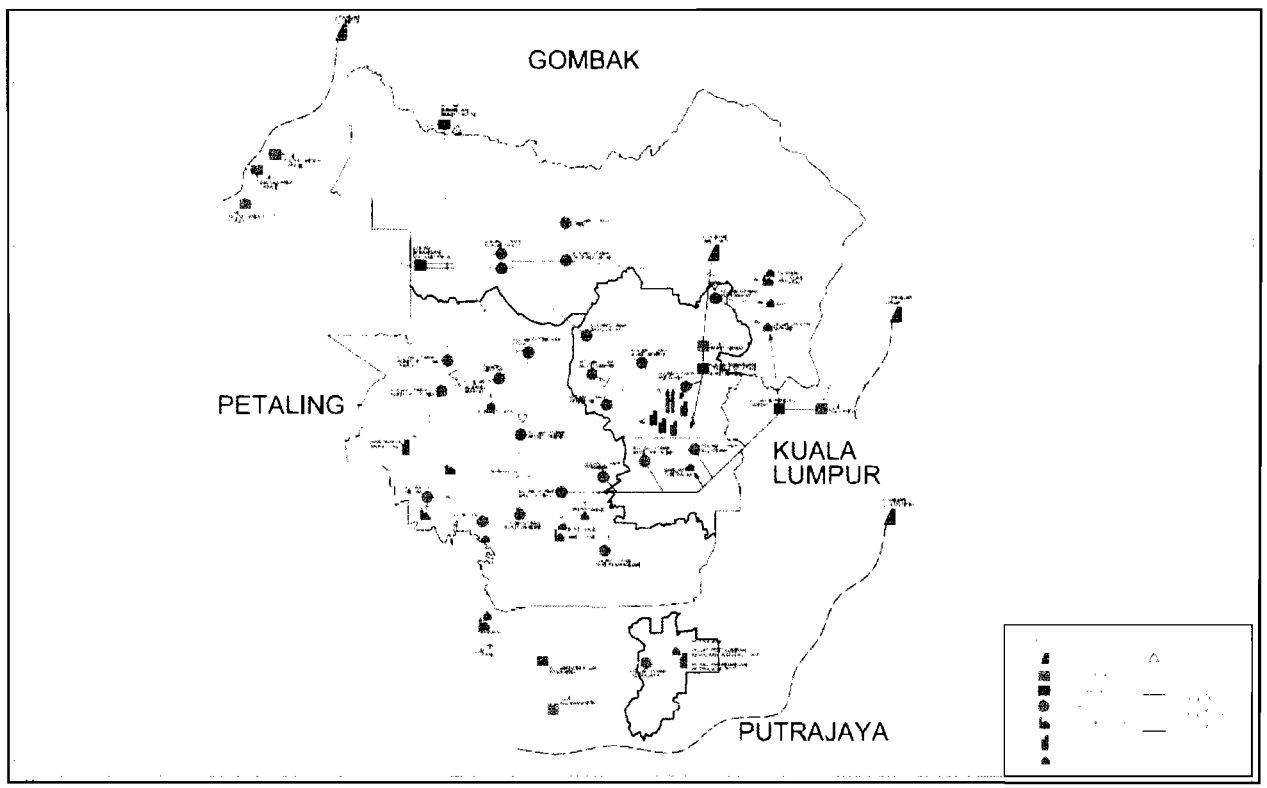


Figure 3.3

Water Supply Pipeline Networks



3.4 Population and Sample

This type of sampling is employed since Zikmund, 2003 have proposed this would ensure every element in the population has a known and equal chance to be included in the sample as a subject. This sampling methodology has the least bias and provides the potential for the most generalization. During the onset of this study, 170 sets of questionnaire were randomly distributed to the respondents working across the operational zones mentioned earlier and its main office. According to Krejcie and Morgan, 1970, for a population of 200 employees, 132 samples are adequate and would be appropriate for a research and data analyzing.

3.5 Data Collection

The questionnaire based on the Hayes's model (170 sets) were distributed personally to the supervisors from each district offices (ten (10) district offices and one (1) headuqarters office). The number of questionnaire sets distributed per district varies according to the number of operations personnel stationed at each office. The number of operations personnel varies according to the operational zones, they are divided into three (3) classification, district A, B and C, based on the numbers of consumer accounts serviced in the zone. The classification denotes the different amount of workload, district tagged as A classification have the biggest numbers of accounts involved equivalent to the most heavy workload compared to B and C. The completed questionnaires were gathered two weeks after the initial disburserment date. Out of the 170 questionnaires distributed initially, 106 were returned and found to be fit for the statistical analysis. This is equivalent to 62.35% response rate.

3.6 Measurements

An instrument of WSS was developed by Hayes et al. (1998), to measure the workers perception on safety in the workplace in the form of five point Likert scale rating by 1 to 5. The five point rating Likert scale of the WSS independent variables' items are; 1 = Strongly disagree, 2 = Disagree, 3 = Neither Agree or Disagree, 4 = Agree, and 5 = Strongly Agree. The questionnaire used in this survey consists of 61 closed questions regarding Work Safety Scale and compliance with safety behaviour.

The first variable measure the perception of the job safety on condition such as dangerous, safe, hazardous, risk, unhealthy, unsafe or scary. Questions of the second variable were related to co-worker safety in the workplace. The questions in this section were related to their concern on other colleagues' safety by rating on few issues such as "pay attention to safety rules", "follow safety rules", or "keeping work area clean". The third variable looks into how the employee perceives the supervision on safety practices by their supervisors. Some of the questions were such as "keep workers inform of safety rules", "involves workers in setting safety goals", or "updates safety rules". The fourth variable examines the management participation in safety with the questions such as "conduct frequent safety inspection", "provides safe working conditions", or "investigates safety problem quickly". The final independent variable was on evaluation of safety programs by the employees. From the employees' point of view, respondents were asked to rank the evaluations on the worthiness, helps prevent accident, useful, good, first-rate, practicality of programs, usefulness and effectiveness in reducing injuries.

The compliance with safety behaviour (CSB) was treated as dependent variable had used different five point Likert scale. Each CSB item reflected either a safe or unsafe work behaviour. For each of the CSB items, the respective respondents were asked to indicate the frequency of their behaviour on their job by using a scale from 1 = Never, 2 = Seldom, 3 = Sometime, 4 = Often, and 5 = Always.

3.7 Questionnaire Design

The survey instruments for this research will consist of 61 items; 11 items for measuring compliance with safety behaviour, and 50 items for Work Safety Scale as per adopted from Hayes et al. (1998). The detailed distributions of these items according to their respective parts are well-documented in Table 3.1.

All five facets of independent variables and dependent variable will be measured using work safety scale developed by Hayes et al. (1998). Each of WSS subscale (job safety, coworker safety, supervisor safety, management safety practices and safety program) consists of 10 items that need to be answered by respective respondents

Compliance with safety behaviour (CSB) consists of 11 items (Table 3.7). The written items in the CSB must be general enough to apply to various occupations. Each CBS item reflected either a safe or unsafe work behaviour. For each of the CBS items, the respective respondents will be asked to indicate the frequency of their behaviour on their job by using a scale from 1 to 5 (Hayes et al., 1998).

The questionnaire was prepared in both English and Malay language to ensure that all respondents could understand precisely on each items of the survey. Among the respondents are from the Reservoir Pump Operator, Technician and Assistant Managers.

Table 3.1

Distribution of Questionnaire Items

Section	Question	Number of Item
I	Demographic Data	6
II	Work Safety Scale (WSS)	
	i. JobSafety	10
	ii. Coworker Safety	10
	iii. Supervisor Safety	10
	iv. Management Safety	10
	v. Safety Program (Policies)	10
III	Compliance with Safety Behaviour	11

3.8 Pilot Study

Pilot test was conducted prior to the start of this full study in order to identify the reliability, consistency and stability of the research process. 30 respondents from the water distribution company were surveyed to partake in the pilot study. As postulated by Zikmund, 2003, this pilot study would definitely serve as a guide for a larger study. Based on the analysis, all of the variables (independent and dependent) were found to be statistically reliable as per the suggestion made by Nunally, 1978 whereby all of the Cronbach's alpha value is above 0.7. Due to the pilot study being reliable, 170 questionnaires were then distributed to the personnel randomly.

3.9 Summary

This chapter has reviewed all the methodological factors involved in this study. The research framework, design of the study, population and sample of the study, data collection, measurements involved, questionnaire design, pilot study and data analysis have been explained. Based on the pilot study being significant, the larger study is hence able to be carried out. Out of the 170 questionnaires distributed initially to one (1) main office and ten (10) districts offices, 106 were returned and found to be fit for the statistical analysis. This is equivalent to 62.35% response rate. None of the 106 data or respondents was excluded during the statistical analysis.

CHAPTER 4

RESULTS

4.1 Introduction

This chapter will put forward the analysis treatment conducted on the gathered data. Among the test conducted are the realiability test descriptive frequencies Pearson correlations and regression analysis. The descriptive frequencies covered the demographic aspect of the questionnaire namely the job title gender working experience age race and education level. The results of the analysis are as depicted throughout this chapter.

4.2 Response Rate

Out of the 170 questionnaires distributed initially to one (1) main office and ten (10) districts offices, 106 were returned and deemed fit for the statistical analysis. This is equivalent to 62.35% response rate (106 out of 170). None of the 106 data or respondents was excluded during the statistical analysis.

4.3 Profile of Respondents

The 170 questionnaires were distibuted among the Water Quality Department and the Operation and Maintenance Department located in each ten (10) operational zones of the water distribution company. These personnel were selected because of the nature

of their work involve some form of risk or another pending on the task at hand compared to other departments in the company. The details are as per table 4.1.

Table 4.1

Demographic Scale of Respondents

	Frequency	Percentage
Job Title		
Assistant Manager	Q	0.9%
Executive	18	17%
Supervisor	16	15.%
Technician	40	37.7%
Fitter	30	28.3%
Operator	1	0.9%
Gender		
Male	97	91.5%
Female	9	8.5%
Race		
Malay	103	97.2%
Indian	2	1.9%
Chinese	1	0.9%
Education Level		
Secondary certificate	21	19.8%
Competency certificate	20	18.9%
Diploma	45	42.5%
Degree	18	17%
Master	2	1.9%
Age	Mean = 31.14	Standard Deviation = 6.83
Experience	Mean = 7.44	Standard Deviation = 6.11

4.4 Realibility Analysis

Reliability measurement was done using Cronbach's alpha method to determine the internal consistency for each factor (Nunally, 1978). Nunally, 1978 suggested that for a basic research to be considered realiable the alpha value should be 0.7 and above. The measurement and its subsequent alphas of this study are: job safety (α =0.823) coworker safety (α =0.856) supervisor safety (α =0.928) management safety (α =0.933) safety program (α =0.781) and compliance with safety behaviour (α =0.824) as per Table 4.2.

Table 4.2

Reliability Coefficients for Each Variable

Variable	Cronbach's Alpha	Deleted Item
Job Safety	0.823	-
Coworker Safety	0.856	-
Supervisor Safety	0.928	-
Management Safety	0.933	-
Safety Program	0.781	-
Compliance with Safety Behaviour	0.824	-

4.5 Descriptive Statistics of Main Variables

The descriptive of frequencies on this study is as per Table 4.3 below. The sample are 106 respondents.

Table 4.3

Frequencies of Variables (N=106)

Variables	Mean	Standard Deviation	Minimum	Maximum
Job Safety	2.91	0.55	1.50	4.00
Coworker Safety	3.74	0.61	2.10	5.00
Supervisor Safety	3.83	0.61	2.10	5.00
Management Safety	3.67	0.72	2.00	5.00
Safety Program	3.95	0.44	2.60	5.00
Compliance with Safety Behaviour	4.03	0.56	2.64	5.00

4.6 Correlations

Table 4.4 depicts the correlations matrix which explains the relationship between compliance with safety behaviour (CSB) with all of the five (5) facets of the work safety scale (WSS) variables. The strongest linear relationship was observed between CSB and safety program ($r = 0.386$, $p \leq 0.01$). The positive relationship denotes that as the score of CSB increases, so does the rating for satisfaction with safety program. The second highest was exhibited between CSB and management safety ($r = 0.383$, $p \leq 0.01$) followed by supervisor safety ($r = 0.377$, $p \leq 0.01$) and job safety ($r = 0.326$, $p \leq 0.01$). Only one (1) facet of the WSS was found to be insigficant for this specific type of sample setting, which is the coworker safety ($r = 0.142$, $p > 0.05$).

Table 4.4

Correlations Matrix

	Job Safety	Coworker Safety	Supervisor Safety	Management Safety	Safety Program	Compliance to Safety Behaviour
Job Safety	1.00					
CoWorker Safety	0.110	1.00				
Supervisor Safety	0.010	0.076	1.00			
Management Safety	-0.017	0.168	0.692**	1.00		
Safety Program	-0.043	0.327**	0.411**	0.457**	1.00	
Compliance to Safety Behaviour	0.326**	0.142	0.377**	0.383**	0.386**	1.00

** Correlation is significant at the 0.01 level (2-tailed).

4.7 Regression Analysis

The R-squared value of 0.469 denotes that the five (5) facets of WSS variables manage to explain about 46.9% of the variances in the compliance with safety behaviour. Based on this analysis, three (3) out of five (5) facets of the WSS is significant to the dependent variable, CSB. The variables are job safety, management safety and safety program. As per Table 4.5, the largest beta coefficient value is for the job safety variable ($\beta = 0.449$, $p \leq 0.01$). This implies that job safety contribute the strongest in explaining the dependent variable (CSB). This is followed by the management safety ($\beta = 0.270$, $p \leq 0.05$) and safety program ($\beta = 0.252$, $p \leq 0.05$).

Table 4.5

Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.670	0.459		1.458	0.148
Job Safety	0.425	0.073	0.449	5.858	0.000
Coworker Safety	-0.103	0.069	-0.121	-1.491	0.139
Supervisor Safety	0.137	0.093	0.156	1.474	0.149
Management Safety	0.206	0.083	0.270	2.482	0.015
Safety Program	0.312	0.109	0.252	2.862	0.005

Notes:
F value = 16.44; R = 0.685; $R^2 = 0.469$; Adjusted $R^2 = 0.441$

4.8 Summary

This chapter presents all of the data based on the statistical analysis. Based on the analysis, out of the five (5) facets of the WSS, only three (3) facets are significantly related to the compliance with safety behaviour in this type of setting, a water supply company with an eastern cultural and developing country mindset. The factors are job safety, management safety and safety program. The factors that were found to be non-sognificant in this study are the coworker safety and supervisor safety.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter will discuss the key finding and conclude the present study examining the relationship between perception of employee measured through WSS and compliance with safety behaviour among the water supply distributor operations personnel.

5.2 Recapitulation of Results

This is a replication study of the Work Safety Scale (WSS) developed by Hayes et al. (1998), utilizing the model to investigate factors that influence the compliance with safety behaviour among the operations personnel of the utility sector, specifically the water supply industry. Based on the regression analysis that was depicted in Table 4.5, it shows that job safety is the most significant in predicting the compliance with safety behaviour ($\beta = 0.449$, $p \leq 0.01$) for this water supply company. This is followed by the management safety ($\beta = 0.270$, $p \leq 0.05$) and safety program ($\beta = 0.252$, $p \leq 0.05$). All of these three (3) factors are positively related to the dependent variable, CSB. Hence, the main factors to further improve the company's compliance with safety behaviour level have been identified.

5.3 Discussion

This study has been feasible in determining the perception level among the water distribution company operations personnel via the five (5) facets measurement of the WSS compared against CSB. Based on the results of the analysis, three (3) variable of the WSS are found to be significant to these type of sample setting and they are job safety, management safety and safety program. The other two (2) non-significant variables are the coworker safety and supervisor safety.

The coworker safety is not significant in this study most probably due to the nature of work for these personnel. Though these personnel work in a group or a team, each have a very specific task to be carried out. In an example, a deployed team to investigate a water quality complaint received from the consumer would most probably comprise of a fitter and a technician. The fitter would dismantle the water meter while the technician would conduct the in-situ water quality analysis using the site equipment. The strenuous activities conducted by these employees vary to one another, though each is strenuous in its own requirements. The massiveness of the workload sometimes would require the team to be divided and mobilized to different areas. Among the teams, they were also separate units formed and for different districts, some of the units' task or personnel are not interchangeable.

The supervisor safety is also not significant in this study, most probably due to the job scope of the supervisor in this company. The supervisors are not entitled to provide training, set safety rules nor enforce any safety rules due to the Standard Operating Procedure of the company where training are strictly handled by a section in the Human Resource Department

(HRD), and setting of safety rules and the enforcement of safety rules are solely by the representative of the Health, Safety and Environment (HSE) Section, also from the Human Resource Department. The suggestions on safety are also handled directly by the HSE section. Since the job description in this company is quite detailed out and have spelled out the specific role of each position, the supervisors most probably is reluctant to take proactive measures, baring the repercussion from the management and fear of confrontation with the subordinate. This company was previously a government department, before it was privatized. Most of the supervisors are new employees brought in during the privatization exercise, meanwhile the subordinate (rank technician and below) are from the previous management era, thus, it is understandable on why the supervisors would fear the repercussion of confrontation with the subordinates.

Job safety is the most significant variable among the five (5) measured ($\beta = 0.449$, $p \leq 0.01$). Based on this, by improving the job safety perception among the personnel, an increase to the compliance with safety behaviour would be expected. This is in line with the findings of past researches conducted by Guastello and Guastello, 1988; Harrel, 1990 and Smith et al. (1992). With better perception of the task they are suppose to handle, it is expected the incidence of accident or near miss would be reduced would ensure continuous and uninterrupted service from the personnel. This would benefit the company's image greatly (with no loss time injury) and enhances the employees experience, ensuring he becomes a better employee with better skill at his job and would be able to contribute more towards the development and growth of the company. When the employee comprehends the risk of their task and the need and importance for the safety requirements (which is to safeguard them) a higher acceptance to work procedure bodes well to their well being and the company's performance.

Management safety ($\beta = 0.270$, $p \leq 0.05$) is also significant and positively related to the compliance with safety behaviour. With the increase of management safety perception among the personnel, the score of compliance with safety behaviour could be increased. Providence of adequate safety equipment and ensuring the equipment fits the person instead of a one size fit all would help increase the positive perception. The procurement of the personal protective equipment should have been handled more efficiently, commensurate to the size of the organization and the number of risk related task to be carried out. The perception that the management has shown some sort of care towards the employees' safety and health bodes well with the employees' attachment and loyalty to the company.

Satisfaction with Safety Program ($\beta = 0.252$, $p \leq 0.05$) is positively related to the compliance with safety behaviour. With further identification on suitable safety program to be implemented with a clear objectives and goals, the perception in this variable could be increased thus enhancing the compliance with safety behaviour level among the personnel. The employee might feel that currently the safety training are not conducted frequent enough or the trainings provided is inadequate, this happens because most of the work skill related training have the safety and health part integrated into the training, though this is not clearly spelled out during the commencement of the training. For each new standard operational procedures introduced, a training to the relevant parties related to the SOP would be given, and this training normally have included the safety and health portion during the initial write up. In the job description of each employee in the company, though the number of job descriptions differs between the task and positions, the second last job description would still be to look after his or her (employee) own safety, whereby the employee is expected to adhere

and comply to all safety requirements whether internal (SOP) or external (any legal requirements).

5.4 Implication

The theoretical and practical implications of the findings are discussed in the following separate sections.

5.4.1 Theoretical Implication

This is a replication study of the Work Safety Scale (WSS) developed by Hayes et al. (1998), in a Malaysian context. It is aimed towards expanding the model to investigate the utility sector, specifically the water supply industries of a developing country with eastern cultural setting. Based on the results, this study proves that the model developed by Hayes et al. (1998) can easily be adapted to the eastern and developing country settings and have managed to assess the variables which are significant to the compliance with safety behaviour among the operations personnel of the company. The findings have been interesting, as for the company is previously a government department being before it was privatized, with a mix of new employees and the stalwarts in the operation, hence explaining some of the factors not significant found in this study.

5.4.2 Practical Implication

The three (3) variables identified to be significant to the water distribution company would provide the potential for the company to improve on the safety and health management. This definitely benefits the company to improve the level of compliance with safety behaviour among its employee by having the significant factors identified instead of blindly investing in an unrelated training or other costly programs. With clear objectives and items to be addressed identified earlier on, this is expected to hasten the process of improvement or changes.

5.5 Limitation

The limitation of this study is the time constraint or the duration of this study, which is very brief. With a longer duration, there is potential to differentiate between the water distribution company operational zones since at the moment, within the operational zones, they are divided into three (3) classifications, district A, B and C, based on the numbers of consumer accounts serviced in the zone. The classification denotes the different amount of workload, A being the biggest numbers of accounts involved equivalent to the most heavy workload compared to B and C. It is predicted that zones A, B and C personnel would have a different perception between them. It is also interesting to note that three (3) of the districts within the A classification have just concluded the OHSAS 18001 certification during the survey. The other districts are yet to obtain the certification.

5.6 Conclusion

This research manages and succesfully expand Hayes's WSS model to determine the perception of work safety among the water supply operation's personnel, which is part of the utility sector in a developing nation such as Malaysia. It is interesting that the model is fit to assess the perception in an eastern setting and with a different culture altogether and provides the opportunity for the company to work on improving the compliance of safety behaviour in its organization.

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APPENDICES

APPENDIX A

QUESTIONAIRE SET - WSS

Work Safety Scale (WSS)

(Kajiselidik Skala Keselamatan Kerja)

SECTION I: ABOUT YOURSELF

Job Title *(Jawatan)*: _____
Gender. *(Jantina)*: *Male *(Lelaki)*/ Female *(Perempuan)*
Working Experience *(Pengalaman Kerja)*: _____ years *(tahun)*
Age *(Umur)*: _____
Race *(Bangsa)*: _____
Education Level *(Taraf Pendidikan)*: *SPM/STPM / Competent Cert *(Sijil Mahir)*/ Diploma/ Degree/ Masters/ PhD

*Delete where not applicable *(Potong yang tidak berkenaan)*

SECTION II: WORKPLACE SAFETY SCALE

Think about your current job. Using the scale below, please answer the following questions. *Fikirkan tentang pekerjaan semasa anda. Dengan menggunakan skala di bawah, sila jawab soalan-soalan berikut.*

Strongly Disagree/ *Sangat Tidak Setuju*	Disagree/ *Tidak Setuju*	Neither Agree nor Disagree/ *Berkecuali*	Agree/ *Setuju*	Strongly Agree/ *Sangat Setuju*
1	2	3	4	5

1. <u>Job Safety/ *Keselamatan Pekerjaan*</u>

Think about your job. Do you agree or disagree that each of the following words or phrases describes your job? Circle one answer for each statement using the scale at the top of the page. *Fikirkan tentang pekerjaan anda. Adakah anda bersetuju atau tidak bersetuju terhadap kenyatan-kenyataan berikut berkenaan dengan kerja anda? Bulatkan setiap jawapan berpandukan skala yang dinyatakan di atas.*

1.	Dangerous *(Merbahaya)*	1 2 3 4 5	6.	Could Get Hurt Easily *(Senang mendapat kecederaan)*	1 2 3 4 5

2.	Safe *(Selamat)*	1 2 3 4 5	7.	Unsafe *(Tidak Selamat)*	1 2 3 4 5
3.	Hazardous *(Berhazad)*	1 2 3 4 5	8.	Fear for Health *(Memudaratkan Kesihatan)*	1 2 3 4 5
4.	Risky *(Berisiko)*	1 2 3 4 5	9.	Chance of Death *(Berpeluang menyebabkan kematian)*	1 2 3 4 5
5.	Unhealthy *(Tidak Sihat)*	1 2 3 4 5	10.	Scary *(Menakutkan)*	1 2 3 4 5

2. Coworker Safety/ *Keselamatan Rakan Sekerja*

Think about the people you work with. Do you agree or disagree that each of the following words or phrases describes these people? Circle one answer for each statement using the scale at the top of the page. *Fikirkan tentang orang yang bekerja dengan anda. Adakah anda bersetuju atau tidak bersetuju terhadap kenyataan-kenyataan berikut berkenaan dengan sikap mereka? Bulatkan setiap jawapan berpandukan skala yang dinyatakan di atas.*

1.	Ignore safety rules *(Mengabaikan peraturan-peraturan keselamatan)*	1 2 3 4 5	6.	Encourage others to be safe *(Menggalakkan orang lain bekerja dengan selamat)*	1 2 3 4 5
2.	Don't care about others safety *(Tidak pedulikan keselamatan orang lain)*	1 2 3 4 5	7.	Take chances with safety *(Menggadaikan keselamatan sendiri)*	1 2 3 4 5
3.	Pay attention to safety rules *(Memberi perhatian terhadap peraturan-peraturan keselamatan)*	1 2 3 4 5	8.	Keep work area clean *(Memastikan tempat kerja bersih)*	1 2 3 4 5
4.	Follow safety rules *(Mematuhi peraturan-peraturan keselamatan)*	1 2 3 4 5	9.	Safety-oriented *(Berorientasikan keselamatan)*	1 2 3 4 5
5.	Look out for others' safety *(Mengambil berat terhadap keselamatan orang lain)*	1 2 3 4 5	10.	Don't pay attention *(Tidak menumpukan perhatian)*	1 2 3 4 5

3. Supervisor Safety/ *Keselamatan Penyelia*

Think about your immediate supervisor. Do you agree or disagree that each of the following words or phrases describes your immediate supervisor? Circle one answer for each statement using the scale at the top of the page. *Fikirkan tentang penyelia terdekat anda. Adakah anda bersetuju atau tidak bersetuju terhadap kenyatan-kenyataan berikut berkenaan dengan penyelia terdekat anda? Bulatkan setiap jawapan berpandukan skala yang dinyatakan di atas.*

1.	Praises safe work behaviours *(Menghargai perilaku selamat)*	1 2 3 4 5	6.	Discusses safety issues with others *(Membincangkan isu-isu keselamatan dengan rakan sekerja yang lain)*	1 2 3 4 5
2.	Encourages safe behaviours *(Menggalakkan perilaku selamat)*	1 2 3 4 5	7.	Updates safety rules *(Mengemaskini peraturan-peraturan keselamatan)*	1 2 3 4 5
3.	Keep workers inform of safety rules *(Sentiasa memaklumkan peraturan-peraturan keselamatan kepada pekerja)*	1 2 3 4 5	8.	Trains workers to be safe *(Melatih pekerja supaya bekerja dengan selamat)*	1 2 3 4 5
4.	Rewards safe behaviours *(Memberi ganjaran terhadap perilaku selamat)*	1 2 3 4 5	9.	Enforces safety rules *(Menguatkuasakan peraturan-peraturan keselamatan)*	1 2 3 4 5
5.	Involves workers in setting safety goals *(Melibatkan pekerja dalam menetapkan matlamat keselamatan)*	1 2 3 4 5	10.	Acts on safety suggestions *(Bertindak terhadap cadangan-cadagan keselamatan)*	1 2 3 4 5

4. Management Safety/ *Keselamatan oleh Pengurusan*

Think about your management. Do you agree or disagree that each of the following words or phrases describes your management? Circle one answer for each statement using the scale at the top of the page. *Fikirkan tentang pihak pengurursan anda. Adakah anda bersetuju atau tidak bersetuju terhadap kenyatan-kenyataan berikut berkenaan dengan mereka? Bulatkan setiap jawapan berpandukan skala yang dinyatakan di atas.*

1.	Provide enough safety programs *(Menyediakan program keselamatan yang mencukupi)*	1 2 3 4 5	6.	Provide safe working conditions *(Menyediakan tempat kerja yang selamat)*	1 2 3 4 5
2.	Conduct frequent safety inspection *(Menjalankan pemeriksaan keselamatan secara kerap)*	1 2 3 4 5	7.	Response quickly to safety concerns *(Bertindak segera terhadap isu-isu keselamatan)*	1 2 3 4 5
3.	Investigates safety problems quickly *(Menyiasat masalah-masalah keselamatan dengan segera)*	1 2 3 4 5	8.	Helps maintain clean work area *(Membantu mengekalkan tempat kerja yang bersih)*	1 2 3 4 5
4.	Rewards safe workers *(Memberi ganjaran terhadap pekerja-pekerja yang bekerja dengan selamat)*	1 2 3 4 5	9.	Provides safety information *(Menyediakan maklumat-maklumat keselamatan)*	1 2 3 4 5
5.	Provides safe equipment *(Menyediakan peralatan-peralata kerja yang selamat)*	1 2 3 4 5	10.	Keeps workers informed of hazards *(Sentiasa memaklumkan kepada pekerja berkenaan keadaan-keadaan yang merbahaya)*	1 2 3 4 5

5. Safety Programme (Policies)/ *Program dan Polisi Keselamatan*

Think about your safety programs at work. Do you agree or disagree that each of the following words or phrases describes this safety program? Circle one answer for each statement using the scale at the top of the page. *Fikirkan tentang perlaksanaan program keselamatan di tempat kerja anda. Adakah anda bersetuju atau tidak samada setiap ungkapan di bawah adalah pernyataan berkaitan dengan program tersebut? Bulatkan setiap jawapan berpandukan skala yang dinyatakan di atas.*

1.	Worthwhile *(Bermanfaat)*	1 2 3 4 5	6.	Unclear *(Tidak jelas)*	1 2 3 4 5
2.	Helps prevent accident *(Membantu mencegah kemalangan)*	1 2 3 4 5	7.	Important *(Penting)*	1 2 3 4 5

3.	Useful *(Berfaedah)*	1 2 3 4 5	8.	Effective in reducing injuries *(Efektif mengurangkan kecederaan)*	1 2 3 4 5
4.	Good *(Bagus)*	1 2 3 4 5	9.	Doesn't apply to my workplace *(Tidak sesuai diaplikasikan di tempat kerja saya)*	1 2 3 4 5
5.	First-rate *(Sangat bernilai)*	1 2 3 4 5	10.	The safety program/ policy is not effective *(Program/ polisi keselamatan tidak berkesan)*	1 2 3 4 5

APPENDIX B

QUESTIONAIRE SET - CSB

SECTION III: COMPLIANCE WITH SAFETY BEHAVIOUR

6. <u>Compliance with Safety Behaviours/ *Kepatuhan terhadap Perilaku Kerja Selamat*</u>

Think about your current job. Using the scale below, please answer the following questions on the following pages. *Fikirkan tentang pekerjaan terkini anda.Dengan berpandukan skala di bawah, sila jawab soalan-soalan yang telah disenaraikan.*

Never/ *Tidak Pernah*	Seldom/ *Jarang*	Sometimes/ *Kadangkala*	Often/ *Kerapkali*	Always/ *Selalu*
1	2	3	4	5

1.	Overlook safety procedures in order to get my job done more quickly *(Mengabaikan prosedur keselamatn semata-mata ingin memastikan kerja dapat disiapkan dengan segera)*	1 2 3 4 5
2.	Follow all safety procedures regardless of the situation I am in *(Mematuhi segala prosedur keselamatan tanpa mengambil kira situasi saya bekerja)*	1 2 3 4 5

3.	Handle all situations as if there is a possibility of having an accident *(Mengendalikan semua situasi dengan beranggapan terdapat kebarangkalian kemalangan boleh berlaku)*	1 2 3 4 5
4.	Wear safety equipment required by practice *(Menggunakan peralatan-peralatan keselamatan yang telah ditetapkan)*	1 2 3 4 5
5.	Keep my work area clean *(Memastikan tempat keja saya bersih)*	1 2 3 4 5
6.	Encourage co-workers to be safe *(Menggalakkan rakan sekerja untuk bekerja dengan selamat)*	1 2 3 4 5
7.	Keep my work equipment in safe working condition *(Memastikan peralatan-peralatan kerja saya berada dalam keadaan selamat)*	1 2 3 4 5
8.	Take shortcuts to safe working behaviours in order to get the job done faster *(Mengambil jalan pintas terhadap perilaku kerja selamat supaya kerja dapat disiapkan dengan segera)*	1 2 3 4 5
9.	Do not follow safety rules that I think are unnecessary *(Tidak mematuhi peraturan-peraturan keselamatan yang dianggap tidak penting)*	1 2 3 4 5
10.	Report safety problems to my supervisor when I see safety problems *(Melapor kepada penyelia apabila mengenalpasti/ mendapati terdapat masalah-masalah keselamatan)*	1 2 3 4 5
11.	Correct safety problems to ensure accidents will not occur *(Memperbetulkan masalah-masalah keselamatan bagi memastikan kemalangan tidak berlaku)*	1 2 3 4 5

APPENDIX C

STATISTICAL OUTPUT

RELIABILITY – JOB SAFETY

Case Processing Summary

		N	%
Cases	Valid	106	100.0
	Excluded[a]	0	.0
	Total	106	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.823	10

Item Statistics

	Mean	Std. Deviation	N
RecodeJS1	2.4151	.99396	106
Safe	3.6226	.83327	106
RecodeJS3	2.2170	.61729	106
RecodeJS4	2.1321	.61838	106
RecodeJS5	3.2358	.88964	106
RecodeJS6	2.8302	.99016	106
RecodeJS7	3.2170	.90506	106
RecodeJS8	3.1509	.90283	106
RecodeJS9	3.0094	1.09974	106
RecodeJS10	3.2830	.96367	106

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
RecodeJS1	26.6981	24.518	.544	.804
Safe	25.4906	29.395	.086	.846
RecodeJS3	26.8962	28.646	.278	.826
RecodeJS4	26.9811	27.504	.459	.814
RecodeJS5	25.8774	26.547	.385	.820
RecodeJS6	26.2830	22.852	.743	.780
RecodeJS7	25.8962	24.151	.662	.791
RecodeJS8	25.9623	25.160	.540	.804
RecodeJS9	26.1038	22.799	.653	.790
RecodeJS10	25.8302	23.323	.710	.784

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
29.1132	30.863	5.55547	10

RELIABILITY – COWORKER SAFETY

Case Processing Summary

		N	%
Cases	Valid	106	100.0
	Excluded[a]	0	.0
	Total	106	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.856	10

Item Statistics

	Mean	Std. Deviation	N
RecodeCS1	3.3774	1.11657	106
RecodeCS2	3.8019	.88823	106
AttentionToSafety	3.8491	.89221	106
FollowSafetyRule	3.8019	.70939	106
LookOutOther	3.8113	.80609	106
EncourageOthers	3.8208	.88153	106
RecodeCS7	3.7358	1.03558	106
KeepWorkAreaClean	3.7736	.93893	106
SafetyOriented	3.8019	.83289	106
RecodeCS10	3.6226	1.07307	106

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
RecodeCS1	34.0189	27.942	.683	.831
RecodeCS2	33.5943	30.910	.562	.842
AttentionToSafety	33.5472	29.412	.728	.828
FollowSafetyRule	33.5943	32.148	.572	.843
LookOutOther	33.5849	31.597	.552	.843
EncourageOthers	33.5755	30.761	.584	.840
RecodeCS7	33.6604	32.226	.336	.864
KeepWorkAreaClean	33.6226	30.104	.608	.838
SafetyOriented	33.5943	30.415	.669	.834
RecodeCS10	33.7736	31.053	.422	.857

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
37.3962	37.251	6.10336	10

RELIABILITY – SUPERVISOR SAFETY

Case Processing Summary

		N	%
Cases	Valid	106	100.0
	Excluded[a]	0	.0
	Total	106	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.928	10

Item Statistics

	Mean	Std. Deviation	N
PraiseBehaviour	4.01	.697	106
EncourageBehaviour	4.11	.558	106
InformWorkers	4.05	.735	106
RewardsBehaviour	3.09	1.028	106
InvolveWorkers	3.79	.686	106
DiscussSafety	3.86	.749	106
UpdateSafety	3.75	.895	106
TrainWorkers	3.85	.848	106
EnforceSafet	3.81	.885	106
ActOnSafety	3.91	.697	106

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PraiseBehaviour	34.22	31.276	.752	.919
EncourageBehaviour	34.11	32.863	.696	.923
InformWorkers	34.18	30.491	.812	.916
RewardsBehaviour	35.13	30.611	.523	.935

InvolveWorkers	34.43	31.124	.788	.917
DiscussSafety	34.37	30.559	.786	.917
UpdateSafety	34.48	29.547	.748	.919
TrainWorkers	34.38	29.723	.776	.917
EnforceSafet	34.42	29.655	.746	.919
ActOnSafety	34.32	31.363	.739	.919

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
38.23	37.624	6.134	10

RELIABILITY – MANAGEMENT SAFETY

Case Processing Summary

		N	%
Cases	Valid	106	100.0
	Excluded[a]	0	.0
	Total	106	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.933	10

Item Statistics

	Mean	Std. Deviation	N
ProvideEnough	3.85	.837	106
ConductFrequent	3.60	.912	106
InvestigateQuickly	3.58	.984	106
RewardsSafeWorkers	2.75	1.145	106
ProvideSafeEquipment	3.86	.833	106
ProvideSafeCondition	3.62	.980	106
RespondQuickly	3.66	.914	106

HelpsMaintainArea	3.83	.878	106
ProvideSafetyInfo	4.04	.703	106
KeepWorkersInformed	3.92	.806	106

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ProvideEnough	32.87	42.325	.750	.925
ConductFrequent	33.11	41.606	.744	.925
InvestigateQuickly	33.13	40.992	.733	.926
RewardsSafeWorkers	33.96	39.884	.692	.930
ProvideSafeEquipment	32.86	42.180	.769	.924
ProvideSafeCondition	33.09	42.639	.593	.934
RespondQuickly	33.06	40.302	.866	.919
HelpsMaintainArea	32.89	41.473	.792	.923
ProvideSafetyInfo	32.68	44.106	.707	.928
KeepWorkersInformed	32.80	42.275	.789	.924

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
36.72	51.195	7.155	10

RELIABILITY – SAFETY PROGRAM (POLICIES)

Case Processing Summary

		N	%
Cases	Valid	106	100.0
	Excluded[a]	0	.0
	Total	106	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.781	10

Item Statistics

	Mean	Std. Deviation	N
Worthwhile	4.1698	.57688	106
HelpPreventAcc	4.1604	.61932	106
Useful	4.1226	.59686	106
Good	4.1038	.58439	106
FirstRate	4.1698	.63952	106
RecodeSP6	3.3868	.96185	106
Important	4.1509	.59829	106
EffectiveReducing	4.0660	.62135	106
RecodeSP9	3.5660	1.12985	106
RecodeSP10	3.6038	.94294	106

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Worthwhile	35.3302	15.709	.658	.744
HelpPreventAcc	35.3396	15.579	.632	.744
Useful	35.3774	15.704	.633	.745
Good	35.3962	15.594	.675	.741
FirstRate	35.3302	16.033	.510	.757
RecodeSP6	36.1132	16.254	.242	.797
Important	35.3491	16.363	.482	.761
EffectiveReducing	35.4340	15.981	.540	.754
RecodeSP9	35.9340	15.472	.259	.806
RecodeSP10	35.8962	15.389	.375	.776

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
39.5000	19.052	4.36490	10

RELIABILITY – COMPLIANCE WITH SAFETY BEHAVIOUR

Case Processing Summary

		N	%
Cases	Valid	106	100.0
	Excluded[a]	0	.0
	Total	106	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.824	11

Item Statistics

	Mean	Std. Deviation	N
RecodeCSB1	3.7358	1.20556	106
FollowAll	3.5283	1.12299	106
HandleAll	3.8774	.85860	106
WearSafetyEquipment	4.1132	.85435	106
KeepWorkAreaClean	4.1509	.82569	106
EncourageCoworker	4.3019	.69241	106
KeepEquipmentSafe	4.2264	.81979	106
RecodeCSB8	3.8962	1.10349	106
RecodeCSB9	4.0660	1.01671	106
ReportProblem	4.3679	.76002	106
CorrectSafety	4.0377	.80385	106

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
RecodeCSB1	40.5660	29.010	.562	.803
FollowAll	40.7736	33.091	.263	.835
HandleAll	40.4245	35.180	.181	.835
WearSafetyEquipment	40.1887	31.088	.623	.798
KeepWorkAreaClean	40.1509	31.196	.637	.797
EncourageCoworker	40.0000	32.114	.658	.799
KeepEquipmentSafe	40.0755	31.994	.549	.805
RecodeCSB8	40.4057	29.520	.585	.800
RecodeCSB9	40.2358	31.268	.480	.811
ReportProblem	39.9340	32.538	.535	.807
CorrectSafety	40.2642	32.291	.527	.807

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
44.3019	37.756	6.14456	11

DESCRIPTIVE ANALYSIS – DEMOGRAPHIC DATA

Statistics

		Job	Gender	Experience	Age	Race	Education
N	Valid	106	106	106	106	106	106
	Missing	0	0	0	0	0	0
Mean			1.08	7.44	31.14	1.05	2.62
Std. Deviation			.280	6.105	6.826	.289	1.046
Minimum			1	1	20	1	1
Maximum			2	31	54	3	5

Job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	AsstManager	1	.9	.9	.9
	Executive	18	17.0	17.0	17.9
	Fitter	30	28.3	28.3	46.2
	Operator	1	.9	.9	47.2
	Supervisor	16	15.1	15.1	62.3
	Technician	40	37.7	37.7	100.0
	Total	106	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	97	91.5	91.5	91.5
	Female	9	8.5	8.5	100.0
	Total	106	100.0	100.0	

Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	2.8	2.8	2.8
	2	1	.9	.9	3.8
	2	1	.9	.9	4.7
	2	4	3.8	3.8	8.5
	3	1	.9	.9	9.4
	3	2	1.9	1.9	11.3
	4	1	.9	.9	12.3
	4	13	12.3	12.3	24.5
	5	1	.9	.9	25.5
	5	17	16.0	16.0	41.5
	6	20	18.9	18.9	60.4
	7	14	13.2	13.2	73.6
	8	12	11.3	11.3	84.9
	9	2	1.9	1.9	86.8
	10	2	1.9	1.9	88.7

	12	1	.9	.9	89.6
	15	3	2.8	2.8	92.5
	20	1	.9	.9	93.4
	23	1	.9	.9	94.3
	25	1	.9	.9	95.3
	27	2	1.9	1.9	97.2
	29	1	.9	.9	98.1
	30	1	.9	.9	99.1
	31	1	.9	.9	100.0
	Total	106	100.0	100.0	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20	1	.9	.9	.9
	23	2	1.9	1.9	2.8
	24	2	1.9	1.9	4.7
	25	8	7.5	7.5	12.3
	26	4	3.8	3.8	16.0
	27	8	7.5	7.5	23.6
	28	14	13.2	13.2	36.8
	29	23	21.7	21.7	58.5
	30	7	6.6	6.6	65.1
	31	6	5.7	5.7	70.8
	32	6	5.7	5.7	76.4
	33	1	.9	.9	77.4
	34	5	4.7	4.7	82.1
	35	3	2.8	2.8	84.9
	36	2	1.9	1.9	86.8
	37	2	1.9	1.9	88.7
	38	2	1.9	1.9	90.6
	40	1	.9	.9	91.5
	41	1	.9	.9	92.5
	45	1	.9	.9	93.4
	49	1	.9	.9	94.3
	50	1	.9	.9	95.3
	52	1	.9	.9	96.2

	53	3	2.8	2.8	99.1
	54	1	.9	.9	100.0
	Total	106	100.0	100.0	

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	103	97.2	97.2	97.2
	Chinese	1	.9	.9	98.1
	Indian	2	1.9	1.9	100.0
	Total	106	100.0	100.0	

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary Cert	21	19.8	19.8	19.8
	Competency Cert	20	18.9	18.9	38.7
	Diploma	45	42.5	42.5	81.1
	Degree	18	17.0	17.0	98.1
	Masters	2	1.9	1.9	100.0
	Total	106	100.0	100.0	

DESCRIPTIVE ANALYSIS – MAIN VARIABLES

Statistics

		Job Safety	CoWorker Safety	Supervisor Safety	Management Safety	Safety Program	Compliance to Safety Behaviour
N	Valid	106	106	106	106	106	106
	Missing	0	0	0	0	0	0
Mean		2.9113	3.7396	3.8226	3.6717	3.9500	4.0274
Std. Deviation		.55555	.61034	.61339	.71551	.43649	.55860
Minimum		1.50	2.10	2.10	2.00	2.60	2.64
Maximum		4.00	5.00	5.00	5.00	5.00	5.00

JobSafety

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.50	1	.9	.9	.9
	1.90	1	.9	.9	1.9
	2.10	3	2.8	2.8	4.7
	2.20	7	6.6	6.6	11.3
	2.30	8	7.5	7.5	18.9
	2.40	8	7.5	7.5	26.4
	2.50	6	5.7	5.7	32.1
	2.60	7	6.6	6.6	38.7
	2.70	6	5.7	5.7	44.3
	2.80	2	1.9	1.9	46.2
	2.90	10	9.4	9.4	55.7
	3.00	7	6.6	6.6	62.3
	3.10	1	.9	.9	63.2
	3.20	2	1.9	1.9	65.1
	3.30	4	3.8	3.8	68.9
	3.40	12	11.3	11.3	80.2
	3.50	4	3.8	3.8	84.0
	3.60	7	6.6	6.6	90.6
	3.70	3	2.8	2.8	93.4
	3.80	4	3.8	3.8	97.2
	3.90	1	.9	.9	98.1
	4.00	2	1.9	1.9	100.0
	Total	106	100.0	100.0	

CoWorkerSafety

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.10	1	.9	.9	.9
	2.60	8	7.5	7.5	8.5
	2.80	4	3.8	3.8	12.3
	2.90	3	2.8	2.8	15.1
	3.00	2	1.9	1.9	17.0
	3.10	2	1.9	1.9	18.9
	3.20	3	2.8	2.8	21.7

	3.30	2	1.9	1.9	23.6
	3.40	5	4.7	4.7	28.3
	3.50	3	2.8	2.8	31.1
	3.60	5	4.7	4.7	35.8
	3.70	5	4.7	4.7	40.6
	3.80	9	8.5	8.5	49.1
	3.90	3	2.8	2.8	51.9
	4.00	25	23.6	23.6	75.5
	4.10	6	5.7	5.7	81.1
	4.20	2	1.9	1.9	83.0
	4.30	3	2.8	2.8	85.8
	4.40	4	3.8	3.8	89.6
	4.50	2	1.9	1.9	91.5
	4.60	4	3.8	3.8	95.3
	4.80	3	2.8	2.8	98.1
	5.00	2	1.9	1.9	100.0
	Total	106	100.0	100.0	

SupervisorSafety

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.10	2	1.9	1.9	1.9
	2.20	1	.9	.9	2.8
	2.30	3	2.8	2.8	5.7
	2.50	1	.9	.9	6.6
	2.60	1	.9	.9	7.5
	2.80	1	.9	.9	8.5
	3.00	1	.9	.9	9.4
	3.10	3	2.8	2.8	12.3
	3.20	1	.9	.9	13.2
	3.30	2	1.9	1.9	15.1
	3.40	2	1.9	1.9	17.0
	3.50	5	4.7	4.7	21.7
	3.60	8	7.5	7.5	29.2
	3.70	4	3.8	3.8	33.0
	3.80	9	8.5	8.5	41.5
	3.90	15	14.2	14.2	55.7

	4.00	20	18.9	18.9	74.5
	4.10	4	3.8	3.8	78.3
	4.20	3	2.8	2.8	81.1
	4.30	3	2.8	2.8	84.0
	4.40	4	3.8	3.8	87.7
	4.50	2	1.9	1.9	89.6
	4.60	2	1.9	1.9	91.5
	4.70	4	3.8	3.8	95.3
	4.80	1	.9	.9	96.2
	5.00	4	3.8	3.8	100.0
	Total	106	100.0	100.0	

ManagementSafety

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	1	.9	.9	.9
	2.20	2	1.9	1.9	2.8
	2.30	3	2.8	2.8	5.7
	2.40	5	4.7	4.7	10.4
	2.50	1	.9	.9	11.3
	2.60	2	1.9	1.9	13.2
	2.70	2	1.9	1.9	15.1
	2.90	3	2.8	2.8	17.9
	3.00	2	1.9	1.9	19.8
	3.20	3	2.8	2.8	22.6
	3.30	1	.9	.9	23.6
	3.40	6	5.7	5.7	29.2
	3.50	3	2.8	2.8	32.1
	3.60	8	7.5	7.5	39.6
	3.70	4	3.8	3.8	43.4
	3.80	18	17.0	17.0	60.4
	3.90	10	9.4	9.4	69.8
	4.00	10	9.4	9.4	79.2
	4.10	4	3.8	3.8	83.0
	4.30	2	1.9	1.9	84.9
	4.40	1	.9	.9	85.8
	4.50	1	.9	.9	86.8

	4.60	3	2.8	2.8	89.6
	4.70	3	2.8	2.8	92.5
	4.80	2	1.9	1.9	94.3
	4.90	1	.9	.9	95.3
	5.00	5	4.7	4.7	100.0
	Total	106	100.0	100.0	

SafetyProgram

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.60	1	.9	.9	.9
	2.70	1	.9	.9	1.9
	3.10	1	.9	.9	2.8
	3.20	2	1.9	1.9	4.7
	3.40	5	4.7	4.7	9.4
	3.50	5	4.7	4.7	14.2
	3.60	1	.9	.9	15.1
	3.70	12	11.3	11.3	26.4
	3.80	16	15.1	15.1	41.5
	3.90	10	9.4	9.4	50.9
	4.00	23	21.7	21.7	72.6
	4.10	7	6.6	6.6	79.2
	4.20	4	3.8	3.8	83.0
	4.30	2	1.9	1.9	84.9
	4.40	3	2.8	2.8	87.7
	4.50	2	1.9	1.9	89.6
	4.60	1	.9	.9	90.6
	4.70	3	2.8	2.8	93.4
	4.80	2	1.9	1.9	95.3
	5.00	5	4.7	4.7	100.0
	Total	106	100.0	100.0	

ComplianceToSafetyBehaviour

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.64	1	.9	.9	.9
	2.73	1	.9	.9	1.9
	3.00	1	.9	.9	2.8
	3.09	5	4.7	4.7	7.5
	3.18	2	1.9	1.9	9.4
	3.27	4	3.8	3.8	13.2
	3.36	2	1.9	1.9	15.1
	3.45	5	4.7	4.7	19.8
	3.55	3	2.8	2.8	22.6
	3.64	4	3.8	3.8	26.4
	3.73	3	2.8	2.8	29.2
	3.82	6	5.7	5.7	34.9
	3.91	8	7.5	7.5	42.5
	4.00	10	9.4	9.4	51.9
	4.09	5	4.7	4.7	56.6
	4.18	6	5.7	5.7	62.3
	4.27	9	8.5	8.5	70.8
	4.36	5	4.7	4.7	75.5
	4.45	4	3.8	3.8	79.2
	4.55	4	3.8	3.8	83.0
	4.64	4	3.8	3.8	86.8
	4.73	1	.9	.9	87.7
	4.82	1	.9	.9	88.7
	4.91	9	8.5	8.5	97.2
	5.00	3	2.8	2.8	100.0
	Total	106	100.0	100.0	.

CORRELATION

Correlations

		Job Safety	CoWorker Safety	Supervisor Safety	Management Safety	Safety Program	Compliance to Safety Behaviour
Job Safety	Pearson Correlation	1	.110	.010	-.017	-.043	.326**
	Sig. (2-tailed)		.260	.920	.863	.663	.001
	N	106	106	106	106	106	106
CoWorker Safety	Pearson Correlation	.110	1	.076	.168	.327**	.142
	Sig. (2-tailed)	.260		.439	.085	.001	.147
	N	106	106	106	106	106	106
Supervisor Safety	Pearson Correlation	.010	.076	1	.692**	.411**	.377**
	Sig. (2-tailed)	.920	.439		.000	.000	.000
	N	106	106	106	106	106	106
Management Safety	Pearson Correlation	-.017	.168	.692**	1	.457**	.383**
	Sig. (2-tailed)	.863	.085	.000		.000	.000
	N	106	106	106	106	106	106
Safety Program	Pearson Correlation	-.043	.327**	.411**	.457**	1	.386**
	Sig. (2-tailed)	.663	.001	.000	.000		.000
	N	106	106	106	106	106	106
Compliance to Safety Behaviour	Pearson Correlation	.326**	.142	.377**	.383**	.386**	1
	Sig. (2-tailed)	.001	.147	.000	.000	.000	
	N	106	106	106	106	106	106

**. Correlation is significant at the 0.01 level (2-tailed).

REGRESSION

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	SafetyProgramme, JobSafety, CoWorkerSafety, SupervisorSafety, ManagementSafety	.	Enter

a. All requested variables entered.

b. Dependent Variable: ComplianceToSafetyBehaviour

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.685[a]	.469	.441	.39398

a. Predictors: (Constant), SafetyProgramme, JobSafety, CoWorkerSafety, SupervisorSafety, ManagementSafety

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.760	5	2.552	16.441	.000[a]
	Residual	14.436	93	.155		
	Total	27.196	98			

a. Predictors: (Constant), SafetyProgramme, JobSafety, CoWorkerSafety, SupervisorSafety, ManagementSafety

b. Dependent Variable: ComplianceToSafetyBehaviour

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.670	.459		1.458	.148
	JobSafety	.425	.073	.449	5.858	.000
	CoWorkerSafety	-.103	.069	-.121	-1.491	.139
	SupervisorSafety	.137	.093	.156	1.474	.144
	ManagementSafety	.206	.083	.270	2.482	.015
	SafetyProgramme	.312	.109	.252	2.862	.005

a. Dependent Variable: ComplianceToSafetyBehaviour